

REMARKS

Applicants have amended claims 1 and 31 to more particularly point out various features of the present invention. Applicants have also added dependent claims 38-41. Claims 1 and 31 have been amended to clarify the claims and/or to address minor informalities. No new matter is presented by the amendment. Claims 1-31, 38-41 are pending in this application. In view of these amendments and the following comments, Applicants respectfully request reconsideration and allowance of all pending claims. Each of the grounds of objection or rejection is addressed below.

35 U.S.C. § 112, Second Paragraph Rejection

Turning now to the examination on the merits, the present action initial rejects claim 6 stand rejected under 35 U.S.C. § 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Accordingly, claims 1 and 31 is hereby amended to obviate the indefiniteness basis objection. Withdrawal of the pending rejection is respectfully requested.

35 U.S.C. § 102(b) Rejections

The official action next rejects claims 1-10, 15-18, 20-27 and 30 are currently rejected under 35 U.S.C. § 102(b) as being anticipated by Reber U.S. Pat. No. 4,944,861 (Reber). The Office Action alleges that each and every limitation of the claimed inventions are shown in the Reber reference. Based on at least the reasons set forth below, Applicant respectfully disagrees.

Claims 1-10, 15-18, 20-27 and 30 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Reber (U.S. Patent No. 4,944,861). In particular, the Examiner indicates that the Reber reference discloses “a gas sensor comprising an outer shell 41 disposed in a stream of gas and have at least one opening 44 in fluid communication with the gas to be monitored. see Fig. 3 col. 5, lines 29-43” In Reber, Figures 1, 2 and 3 indicate that 41 is a tube (see column 5, line 10). Furthermore, the examiner makes an assertion that Reber discloses a second electrode disposed in the outer shell and positioned in close proximity to the at least one opening so as to be in fluid contact with flue gas. Rather, Reber discloses two electrodes disposed on opposite sides of said sensor tip (see column 5, lines 50-51, claim 1). First Reber does not disclose a second electrode

in its disclosure, except in the claims, thus no support for the claim; second, in the current application, and in reference to claims 1 and 31, the first electrode is not in direct contact with the flue gas, while the second electrode is positioned to be in direct contact with the flue gas. No where in Reber the limitations are mentioned. In light of the following remarks, withdrawal of these rejections is respectfully requested. Furthermore, Applicant amended the independent claims of 1 and 31 to specifically point out the invention.

With respect to claim 1, the references fail to disclose at least the “*a first electrode with an associated time constant disposed within the sensing chamber and being isolated from the flue gas so as not to be in a direct fluid contact with the flue gas; a second electrode with an associated time constant that is different from the time constant associated with the first electrode, disposed in the outer shell and positioned in close proximity to the at least one opening so as to be in fluid contact with the flue gas, a voltage being generated across the first and second electrodes representing at least two conditions.*”

For at least this reason, the Reber reference fails to disclose each and every element of the claimed invention as required by 35 U.S.C. § 102(b). Accordingly, reconsideration and allowance of claims 1-31, 38-41 is respectfully requested.

35 U.S.C. § 103(a) Rejections

The official action next rejects claims 10, 13, 14, 19 and 31 are currently rejected under 35 U.S.C. § 103(a) as being unpatentable over Reber U.S. Pat. No. 4,944,861 (Reber) in view of Yokota U.S. Pat. No. 6,254,749 (Yokota). The Office Action alleges that each and every limitation of the claimed inventions are shown in the combined references. Based on at least the reasons set forth below, Applicant respectfully disagrees.

The cited references, either alone or in combination, fail to teach each and every limitation of the claimed invention.

In particular, the references fail to disclose or suggest at least the following limitations from the amended independent claim 31.

With respect to claim 1, the references fail to disclose at least the “*a first electrode with an associated time constant disposed within the sensing chamber and being isolated from the flue gas so as not to be in a direct fluid contact with the flue gas; a second electrode with an associated time constant that is different from the time constant associated with the first electrode, disposed in the outer shell and positioned in close proximity to the at least one opening so as to be in fluid contact with the flue gas, a voltage being generated across the first and second electrodes representing at least two conditions.*”

Accordingly, it is clear that the cited references, whether separate or considered together, fail to disclose each and every of the claimed limitations. Therefore, the claimed inventions are not obvious over the Reber, Yokota *et al.*, Maeda and/or Takahashi *et al.* references.

Moreover, to establish a *prima facie* case of obviousness under 35 U.S.C. § 103(a), there must be some suggestion or motivation in the references or in the knowledge available to one of ordinary skill in the art to modify or combine the references cited. Further, the examiner must support his/her conclusion with a showing that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention, or the examiner must present a convincing line of reasoning as to why an artisan would have found the claimed invention to have been obvious in light of the teachings of the references.

Pending claims 2-30 and new claims 38-41 are dependent upon one of independent claims 1 and 31. Thus, because claims 1 and 31 are non-obvious and patentable over the cited references as discussed above, claims 2-30 and 38-41 also should be allowable at least by virtue of their dependency on one of the independent claims. Moreover, these claims recite additional limitations that are not disclosed by the cited references, either alone or in combination.

For at least the above reasons, Applicants respectfully submit that all claims 1-31, 38-41 are in condition for allowance and respectfully request the withdrawal of all pending rejections of these claims and timely issuance of a Notice of Allowability.

CONCLUSION

In view of the foregoing amendments and arguments, Applicants respectfully submit that this application is now in condition for allowance. If the Examiner believes that prosecution and allowance of the application will be expedited through an interview, whether personal or telephonic, the Examiner is invited to telephone the undersigned with any suggestions leading to favorable disposition of the application.

Respectfully submitted,

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Date: June 22, 2004

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